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## NOTES.

An interesting illusion affecting the sense of resistance is noticed by Goldscheider in the *Centralblatt für Physiologie*, No. 5, 1889. When a weight is held suspended by a cord and the hand is carefully lowered till the weight rests upon some support and relieves the hand of its downward tension, there is a sensation of resistance to further downward motion; and the resistance is located at the place of the weight. When the weight is sufficiently heavy, the illusion may equal the sensation of touching the support with a rod. The explanation is evidently in the persistence of the muscular tension originally required to support the weight. There is no upward pressure on the skin nor stimulation of any other superficial organs; the illusion and the perception of resistance rest upon some deep-seated sensation, probably that in the joints. The same sensation is present of course in touching with a rod or with the finger alone, though the dermal sensations are added; it is therefore in part at least in the joints that this important factor of belief in the reality of the external world is located. The projection of the sensations of resistance to the end of the rod or to the weight depends on the presence of other ideas which give a preconception of that location.

Thomas W. Engelmann, the discoverer of the photometric bacterium, has continued his observations upon another group of these light-responsive organisms, (*Botan. Zeitung*, No. 42-45, 1888, cf. also *Pflüger's Archiv.*, XLII, p. 183). These are mostly "sulphur bacteria" and all contain a diffuse red pigment (bacteriopurpurin), from which he calls the group *Purpurbacterien*. Their behavior toward light is something as follows: When the illumination is not too long continued, their activity increases with the intensity of the light. Long illumination, as complete darkness, brings them to rest. Sudden decrease of intensity causes a sudden backward movement (*Schreckbewegung*) of some time ten or twenty times their length, followed, if the light continues at a lower intensity, by slower forward movements. Sudden increase of intensity causes more rapid forward movements if the rate is not already very great. In a micro-spectrum they gather thickest in the ultra-red, next in the orange-yellow, and less toward the violet, their preference corresponding with the place of greatest absorption by the bacteriopurpurin. The effect of light on their movements Engelmann believes to be directly proportional to this absorption. Like chlorophyll, the pigment sets free oxygen in the light, a fact neatly demonstrated by the thronging of bacteria sensitive to oxygen about the *Purpurbacterien*.

M. J. Fontan, like Bernheim and others, has made the observation that in the cases of negative hallucinations in hypnotism, the physiological processes are carried out though the psychic ones are inhibited. When a subject acts out the suggestion that he sees nothing red, his pupil none the less contracts when a bright red is shown

and dilates when exposed to a dark red. Better still; let the suggestion be given that red is invisible but when a bell is sounded the vision for red will return. Now let the subject gaze fixedly at a red light and as you sound the bell put out the light, and the subject declares he sees a green light. In other words the retina and the lower centers have been impressed and have performed their function of bringing out the complementary color, though the subject's mind declares itself utterly unconscious of the impression. M. Fontan also makes other apt suggestions on the nature of negative hallucinations or unconscious perceptions as he prefers to term them. (*Revue Scientifique*, May 11, 1889.)

In a preliminary communication in regard to the heat regulation of the human body, Loewy (*Pflüger's Archiv*, XLVI, p. 625) states that he has obtained the following results. The regulation is not perfect; the temperature of the body falls, without exception, upon the withdrawal of a large amount of heat, and in most individuals upon the withdrawal of a small amount. The skin is the principal organ for the regulation of the temperature; cold causes a reflex contraction of the skin and of its vessels, and hence a diminution of the heat dissipation. The heat-production remains unchanged (and hence plays no part in the regulation), so long as no muscular contractions take place. Muscular contractions can be inhibited, even when there is a very considerable fall in the temperature of the body. Extreme and lasting cold produces involuntary contractions. The increased decomposition produced by these contractions (trembling, etc.) is very considerable. It may reach 100 per cent. and probably much more. But still it is not sufficient to prevent a further fall of temperature. This means of regulation is not of practical importance, because we seek artificial sources of warmth long before it is called into play. It does not appear that Loewy made any investigation into the changes in the activity of the sweat-glands, as acted upon directly by their nerve-centers, and not indirectly by their blood-supply.

W. A. Turner, in a communication on the innervation of the muscles of the soft palate (*Jour. Anat. Phys.*, XXIII., 1889, p. 523), concludes: 1st, that there is not sufficient experimental or clinical evidence to support the doctrine that the muscles of the soft palate are supplied by the *portio dura*; 2nd, that experimental evidence shows that these muscles are innervated by the internal branch of the spinal accessory (*nervus accessorius vagi*), whose fibres are distributed along with certain branches of the vagus; 3d, that sufficient clinical evidence exists to prove that paralysis of the palate results from disease affecting the medullary center, the roots and the peripheral distribution of the vagus and its accessory nerve; 4th, that with the paralysis of the palate (*palatoplegia*) there is associated paralysis of the tongue (*glossoplegia*) and of the vocal cords (*laryngoplegia*), either unilateral or bilateral, according to the situation of the disease.

F. T.

The profound effects following the emotional strain of great calamities has been frequently remarked. Those of the late Johnstown disaster are thus described. "Most of the faces that one meets, both male and female, are those of the most profound melancholia, associated with an almost absolute disregard of the future. The

nervous system shows the strain it has borne by a tremulousness of the hand and the lip in man as well as in woman. This nervous state is further evidenced by a peculiar intonation of words, the persons speaking mechanically, while the voices of many rough-looking men are changed into such tremulous notes of so high a pitch as to make one imagine that a child on the verge of tears is speaking. Crying is so rare that your correspondent saw not a tear on any face in Johnstown, but the women that are left are haggard, with pinched features, and heavy, dark lines under their eyes. Indeed the evidence of systemic disturbance is so marked in almost every individual who was present at the time of the catastrophe that it is possible with the eye alone to separate the residents from those outside."

An interesting point of connection between passion and epilepsy (the resemblance of which was remarked by Echeverria) is noticed by Dr. Ch. Féré in the *Revue de l'Hypnotisme* for June, 1889. Observations on blood pressure during the aura show a rise of 200—300 gms. This high pressure continues through the convulsions, but gives place after the attack to one below the normal, which lasts 8–10 hours or longer, and in serial attacks even for several days. A rise of the same sort occurs in the attacks of mental excitement and agitation. Here cupping or mustard baths reduce it very materially (with a concurrent decrease of the symptoms), though the reduction which they effect is slight upon subjects in the normal condition. It is known that violent effort or emotion (both attended by increased pressure) may bring on the fits. One of Féré's cases, an epileptic with a normal pressure of 800 gms., showed 1050 in a period of attacks and 1100 in a fit of anger. An angry imbecile had a pressure of 1000–1100 against 850 when undisturbed; an angry cabman 1100 against 800.

In the *Medical and Surgical Reporter*, Feb. 9, 1889, Dr. Geo. M. Gould gives three cases, one of chorea, one of flatulent dyspepsia of twenty years standing, and one of palpitation of the heart, in which the trouble seems to have been reflexly caused by eye-strain, and ceased after the correction of the ocular errors. In the number of the same journal for March 9, he explains the alleged greater frequency with which eye-strain results in troubles of the eyes themselves before puberty, and in headaches and reflex neuroses after puberty, especially in women. This he does chiefly by reference to the general principle of sexual selection; reflex troubles are less of a hindrance in securing a mate than visible and disfiguring troubles of the eye would be, besides leaving an important organ free to perform its function. In the general causation of eye-strain, the near work required by present civilization is of course an important factor.

A case of epilepsy, described by Drs. Hughlings Jackson and Beever before the London Medical Society (*Brit. Med. Jour.*, Feb. 23, 1889, p. 414), is of special interest, as going to support Ferrier's location of the olfactory center in the hippocampal lobule and adjacent parts. The fits were not severe, the patient neither fell nor lost consciousness, but as a part of her aura had an indescribably horrible smell. Post-mortem examination showed a tumor at the end of the tempero-sphenoidal lobe, surrounding the amygdaloid body and crowding upon the dentate nucleus and the fibers of the internal capsule; the cortex of the hippocampal convolution was uninjured.

The presence of an olfactory hallucination rather than anosmia shows the center to have been excited but not destroyed.

Prof. Venturi, whose study of temporary insanity was noticed in this JOURNAL (Vol. II, p. 178), has added a new case of temporary melancholia, (*Archivio italiano per le mal. nervose, etc.* 1888, XXV, 369). The patient was a temperate and industrious man, 32 years old, and previously of sound health and of sound heredity. After a not inexplicable fit of ill-humor (lasting from one day through the next, but not interfering with sleep or work), just after going to bed, he suddenly fell into the deepest melancholic agitation. On examination 3 hours later, he showed on the psychic side profound disturbance of consciousness, delirium of fear with visual illusions, mental distress, attempts at flight, though not at violence to himself or others, (there were thoughts of suicide at first), and on the physical side, dilated, but responsive pupils and cutaneous hyperæsthesia. Under morphine he quieted down, and after 3 hours' sleep awoke much improved. He slept again in the forenoon and by evening was given over as perfectly restored, though with incomplete recollection of the attack. The insanity did not outlast 14 hours. Dr. Sommer in abstracting the paper for the *Neurolog. Centralbl.* No. 8, 1889, remarks that while such cases rarely come under scientific observation, they are not really so rare as might be supposed. The city-asylums in a large city could undoubtedly furnish a good many examples.

The hold taken by scientific ideas of inebriety is shown by the character of the asylum just started by Prof. Forel of Zürich and Dr. Bleuler. There is a farm connected with the institution on which the patients labor. Total abstinence is enforced; labor is compulsory; the patients are received for a minimum period of six months; hypnotic suggestion is employed; and persons decidedly insane are not received.

The following questions for the discovery of those sensitive to "odic" force are taken from an account of the work of Reichenbach in the *Revue de l'hypnotisme*, Juin 1889. Most of them seem to be the generalizations of experience, and it is easy to see that one who could answer many of them in the affirmative would have the hyper-sensitive nervous organization and the general suggestibility that would make him a good subject for the demonstration of any occult phenomenon—"odic," or hypnotic.

1. Is your sleep calm or disturbed?—The sensitive generally has disturbed sleep.
2. Can you sleep two in a bed?
3. Do you not experience uneasiness when you find yourself in the midst of a crowd at the theatre or in a church?
4. When you give your right hand to any one is it indifferent to you that the pressure of the hand is prolonged?
5. When you handle pieces of money, or better of copper, is it indifferent whether you do so with your right hand or your left? Do you put the money in your right-hand pocket or in the left?
6. Do you experience any sensation when you look at yourself in a mirror? Is the sensation agreeable or disagreeable?
7. When you set the ends of your ten fingers lightly against a wall do you not after a while experience a sensation of heat in one hand, of cold in the other? Which of your hands is cold?

8. When you hold the palms of your hands one beside the other, and they are lightly blown upon is there a difference in the sensation felt by the two hands? Which of the hands has a sensation of heat, which experiences a sensation of cold?

9. Is it disagreeable to you to have flowers in your room at bedtime?

10. Passes made over your hand, your arm, your face, your body—are they felt?

11. Is the direction of these passes indifferent?

12. Do you like sweet and rich food? acid and salt? bitter and astringent?

13. Do you talk in your sleep?

14. Do you distinguish blue and yellow with reference to the impressions produced?

Finally, if it is desired to discover the degree of sensitiveness of the subject, it will be sufficient to make use of passes at a distance.

In a note in the *Revue de l'Hypnotisme* for June, 1889, Dr. E. Dupuy mentions a case of most unusual control over the ocular muscles. The person in question, a woman of 27, was able to move one eye in any of the ordinary planes of motion while she kept the other fixed. She used either eye at will for vision during these motions but not both, the attempt to do so giving rise to a sensation of falling. Her ordinary binocular vision appeared uninjured by these ocular gymnastics.

The following definition of a living being is given by Fernand Lataste in the *Comptes Rendus de la Soc. de Biologie, séance du 5 Jan., 1889*: "A living being is a being composed of elements, in incessant chemical renewal and reacting upon one another in a way to maintain the form and functions [of the being] in a determined cycle of evolution, similar to the cycle traversed by other living beings from which the one under consideration comes forth or to which it is bound by community of origin."

## PERISCOPE.

The remarkable awakening and concentration of interest upon psychological themes within the past few years indicates not only increased activity but a change of direction, if not even of base. More and better methods of both observation and experiment have yielded important results and promise far more important ones in the near future. The movement is peculiarly significant because it indicates that man is to attain a better and more objective knowledge of himself than ever before, and at the same time almost all valid results have immediate applicability in educational methods, mental hygiene, preventive medicine and moral and religious opinion.

It may interest our readers if we note a few important movements in the field represented by the *AMERICAN JOURNAL OF PSYCHOLOGY* within the two years of its existence completed by this issue.

Within this period falls the first international congress for criminal anthropology, held at Rome and organized by Lombroso, Ferri and others to discuss such questions as the following:—is there a general bio-pathological character predisposing to crime and can different sources and types of it be distinguished; is suicide in inverse rela-

tion to murder; moral insanity and epilepsy in prisons and insane asylums; classification of criminals; simulation and dissimulation. A large exposition of skulls, brains, photographs and graphic tables was opened in connection with this congress. While Italian psychology has made its most valuable contributions in this field much besides has been done. Sergi has digested and at several points amplified the work of the English school, making as the strange center of his system the idea of the pathological character of all religions. Golgi has made his remarkable contributions of new methods and results in the field of brain histology. Mosso, one of the most genial and talented of living physiologists, is devoting himself more and more to problems of a chiefly psychophysics character, while many younger men represent nearly all the modern tendencies to be found in Europe in the psychological field. Fresh modern research is taking the place of the speculative views, which far from holding their own in the rapid and new University development of that country, have steadily lost ground since the death of Vera.

In France the exposition has seen the formation of *L'association Internationale d'Hypnologie*, of which M. Bérillon was the leading spirit and the origin of the *Congrès internationale de psychologie expérimentale*, under a permanent committee of 26, and with a membership of nearly 400. The *Revue de l'Hypnotisme* has added to its name 'et de la psychologie physiologique' and modified its contents accordingly. The school of suggestion has carried all before it in the study of hypnotism, (the therapeutic value of which is daily proven,) and has a new monthly organ *La Clinica*, edited by A. S. Herrero. In the *École pratique des Hautes Etudes*, Professor Beaunis has opened a new laboratory for physiological psychology in the building of the new Sorbonne. The *Société de psychologie physiologique* has now been established nearly two years, and began with thirty titular members residing in Paris and corresponding members in the provinces. Its work, so far as we can infer from its publications in the *Revue Philosophique*, is mainly upon phenomena which may be called abnormal, but not morbid, and promises to shed much light upon current popular delusions like spiritualism, telepathy and mind cure. Ribot has been made professor of physiological psychology, first in the Sorbonne and then in the College de France and has continued to make the most convenient and popular of all digests of the results obtained by German savants in both morbid and experimental psychology.

In England very little has been accomplished in empirical psychology, save the valuable anthropological work of Galton, and the work of Horsley and of Schäfer. *Mind* has more than held its own as a model of editorial care, and the Society for Psychical Research, without expressly relinquishing its telepathic theories, is gradually turning its energies into more fruitful and more promising channels.

In Germany hypnotism has made much and sure progress as a therapeutic agent, but almost solely on the basis of the theory of suggestion and chiefly among alienists, where observations are more painstaking than those made in France. The laboratory of Wundt has been much enlarged and now comprises half a dozen well filled rooms. Kraepelin at Dorpat, Preyer at Berlin and Kraft-Ebing at Vienna have begun labors in their new fields of work in lines represented by this JOURNAL. Münsterberg at Freiburg has commenced a very promising and comprehensive series of "contributions to experimental psychology," Ebbinghaus and Goldscheider at Ber-

lin, G. E. Müller, the successor of Lotze at Göttingen, Monakow and Forel, Moll, Loeb, Dessoir, Edinger, Benedict and scores of others have made valuable contributions from their various standpoints. Noteworthy is the growing tendency to psychological lines of investigation by physiologists. This is seen not only in Pflüger's and Du Bois-Reymond's *Archiv*, but in Holmgren's new *Scandinavian Archiv*, in the work of Setschenow's pupils in Russia, particularly Orschansky at Charkow and among American physiologists, particularly in the valuable work of Bowditch of Boston. In Germany the history of philosophy seems settling into a standard university course desirable for all who can give time to it. Kant philology and the theory of knowledge are nearly exhausted lines of work, but even in these courses it is noteworthy that psychological subjects enter at every possible point and everywhere give zest. Psychology has in Germany already awakened the hopes and fears of religious leaders who see in it a great and rising movement. Even in Scandinavian universities the all pervading influence of Boström is yielding to the younger psychologists.

In this country Dr. Jastrow has established rooms for psychological research in the University of Wisconsin, where several determinations have been already made, which will be published in the next number of this JOURNAL. Dr. Cattell has a laboratory for psychological study in the University of Pennsylvania. Dr. Wolfe is introducing these studies into the University of Nebraska, and Dr. Baldwin has been called to represent them from his standpoint at the University of Toronto. Professor Ladd at Yale and Professor James at Harvard have both apparatus for demonstration and research in experimental psychology. In the faculty of Clark University Dr. F. Boas represents the psychological parts of anthropology, Dr. Donaldson neurology, including morbid psychology, and brain localization, Dr. Hall and Dr. Sanford experimental psychology, and Dr. Hodge, whose valuable work has been published in the JOURNAL, is a fellow. The *Anthropologist* and the *Folk-lore Journal*, both less than two years old, the establishment of an experimental station under the competent direction of Dr. Wm. Noyes at the McLean Asylum for the Insane at Somerville, and the valuable work of Dr. Cowles in interesting the American Association of Asylum Superintendents in experimental psychology, the work of the Seybert Commission, and of the American Society for Psychic Research, which is hardly less indebted than is this JOURNAL to the wealth and generosity of Mr. R. Pearsall Smith, the growing demand of our colleges for well trained psychologists, and, we may perhaps be permitted to add, the growing subscription list of this JOURNAL—these and many more indications promise new and better things in the study of the human faculties. In the number and scientific interest of its rare borderland neurological phenomena this country unhappily presents opportunities for certain lines of study unequalled elsewhere. Thus if we consider opportunity for observation, direct practical utility, the high degree of general interest and the wide inferences concerning the profoundest of all human interests which we expect eventually to see warranted in these fields, which we shall intimate later, we must conclude that we are now at the beginning of developments of great importance for science and for man.